AGU FALL MEETING
San Francisco | 14 – 18 December 2015

B33E-0789: *Study on the Characteristics and Impacts of the Spatial-temporal Urban Sprawl in Chinese Coastal Cities using Ocelet*

Wednesday, 16 December 2015
08:00 - 12:20
Moscone South - Poster Hall

- **2015_AGU FALL MEETING-Minmin Li.pdf**
  ePoster

The urban population is expected to rise 67% in developing countries and 86% in developed regions by 2050. As the most populous country in the world, China has been experiencing a remarkable urbanization process since the initialization of the reform and opening-up policies in the late 1970s. During the past several decades, the coastal zone undergone the highest urbanization and motst rapid economic development in China. Accurately understanding the characteristics of the spatial-temporal urban sprawl is helpful for urban planning on optimal land use in the future. Ocelet is an interactive visual interpretation and dynamic coding method that has been designed for studying issues related to space, time and multiple scales that are raised when dynamic landscapes are modelled. Using Ocelet, we aim to study the characteristics of the spatial-temporal urban sprawl in thirteen major Chinese coastal cities and how urban sprawl affects the surrounding land changes. Landsat MSS/TM/ETM/OLI, the China–Brazil Earth Resources Satellite (CBERS) and Chinese HJ-1A data are adopted to acquire urban built-up areas and their dynamic changes from 1979 to 2013. The results show that the urban built-up area increased gradually from 1979 to 2002 (~105 km²/yr), then accelerated about four times from 2002 to 2010 (~396 km²/yr) in thirteen major Chinese coastal cities. Although the expansion slowed down since 2010, the urban built-up area still increased at a fairly high rate (~210 km²/yr) from 2010 to 2013. The urban sprawl speed and pattern in each coastal city has also been analyzed, and has been grouped in three costal zones geographically. As a result of urban sprawl, large areas of arable land, rural settlements and forests were lost in these coastal cities. The lost non-urban land types and areas are different in the three costal zones and quantified respectively.

Authors

Minmin Li *
RADI Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

Zengxiang Zhang
RADI Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

Danny Lo Seen
CIRAD Montpellier

Find Similar

View Related Events

Day: Wednesday, 16 December 2015